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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,701	10/03/2003	Allen Carroll	MLSE 1035-1	9625
22470	7590	03/27/2006	EXAMINER	
HAYNES BEFFEL & WOLFELD LLP P O BOX 366 HALF MOON BAY, CA 94019			CHACKO DAVIS, DABORAH	
			ART UNIT	PAPER NUMBER
			1756	
DATE MAILED: 03/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/679,701	Applicant(s) CARROLL, ALLEN	
	Examiner Daborah Chacko-Davis	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2006.  
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-28 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/05, 01/06</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-16, 20-22, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent Application Publication No. 2004/00075895 (Lin).

Lin, in the abstract, in [0001], [0002], [0012], [0013], [0014], [0015], [0017], [0026], [0027], [0031], [0032], [0033], discloses an immersion lithography system that patterns a photosensitive material coated substrate by exposing the photosensitive material coated wafer to EUV radiation (excimer laser) through a mask, wherein an immersion medium is provided in the gap between the imaging lens (immersion fluid in contact with the lens) and the top surface of the wafer; supplying the immersion fluid (provided by an internal cavity, reservoir) through a fluid passageway (an inlet) provided in the immersion apparatus, wherein the immersion fluid supply means includes a filter means (porous material) that is submerged in the fluid medium, and a fluid removal means (outlet) to remove the fluid medium from the apparatus (claims 11-16, and 20-22).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 17-19, 23-28, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent Application Publication No. 2004/00075895 (Lin) in view of U. S. Patent Application Publication No. 2003/0123040 (Almogoy).

Lin, in the abstract, in [0001], [0002], [0012], [0013], [0014], [0015], [0017], [0026], [0027], [0031], [0032], [0033], discloses an immersion lithography system that patterns a photosensitive material coated substrate by exposing the photosensitive material coated wafer to EUV radiation (excimer laser) through a mask, wherein an immersion medium is provided in the gap between the imaging lens (immersion fluid in contact with the lens) and the top surface of the wafer; supplying the immersion fluid (provided by an internal cavity, reservoir) through a fluid passageway (an inlet) provided in the immersion apparatus, wherein the immersion fluid supply means includes a filter means (porous material) that is submerged in the fluid medium, and a fluid removal means (outlet) to remove the fluid medium from the apparatus (claims 1, 6-10, 17-19, and 23-28).

The difference between the claims and Lin is that Lin does not disclose that a modulator is adapted to modulate and relay the electromagnetic radiation, in accordance to an input pattern description, to the workpiece. Lin does not disclose that

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the modulator is an SLM, and includes reflective pixels such as micromirrors (claims 2-4). Lin does not disclose that the modulator is an acoustooptical modulator (claim 5).

Almog, in [0011], [0017], [0031], and [0032], discloses using a modulator that modulates light (electromagnetic radiation) in response to an input signal provided by a programmable image generator, wherein the modulator is a spatial light modulator that comprises pixels (micromirrors). Almog, in [0058], and [0060], discloses using rotating mirrors (changing the angle of the mirrors to change the angle of the light in the focusing optics) to modulate the light beams and to focus the light beams onto the resist.

Therefore, it would be obvious to a skilled artisan to modify Lin by replacing the mask with a light modulator as suggested by Almog because Almog, in [0038], discloses that employing the suggested modulating lens is less expensive and requires no magnification.

### ***Response to Arguments***

5. Applicant's arguments filed January 4, 2006, have been fully considered but they are not persuasive. The 102 and 103 rejection made in the previous office action (paper no. 0929) are maintained.

A) Applicants argue that Lin does not disclose supplying immersion medium through an orifice arranged in the immersion optics.

Lin, in [0031], and [0032], discloses that the inlet (reference 30), and outlet (reference 32) are part of the internal cavity i.e., part of the immersion optics; reference 18 is immersion medium filled internal cavity into which the optical lens is immersed in.

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B) Applicants argue that Lin does not disclose that an area of contacting is restricted by capillary forces.

Lin in [0024], [0035], and in figures 2, and 4, discloses that the lens and the wafer are positioned in a juxtaposed manner i.e., a very thin gap between the lens and the wafer and inherently causes the immersion medium from contacting in a complete manner (only a portion is contacted) resulting in capillary forces restricting the contacting of the lens and the liquid.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If

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attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcg

March 20, 2006

  
**JOHN A. MCPHERSON**  
**PRIMARY EXAMINER**